

## WHAT IS CLAIMED IS:

1. A cellular system for transmitting information by radio between an infrastructure and mobiles constrained to travel on a determined path, the infrastructure comprising stationary transceiver stations distributed along the path and allocated to successive cells, and each mobile carrying a transceiver, the transceivers of the stationary stations and the transceiver carried by each mobile are controlled in such a manner that, while a mobile is in a given cell, exchanges between the mobile and the transceivers allocated to the cell take place on two different frequencies in alternation during two successive radio cycles.
2. A system according to claim 1, in which each cycle is constituted by a plurality of short exchange frames.
3. A system according to claim 1, using a time division multiple access mode of transmission.
4. A system according to claim 1, in which frames containing essential information are always transmitted on two frequencies in succession.
5. A system according to claim 1, in which the pair of frequencies used in a cell is constituted by two frequencies that are different from the frequencies used in the adjacent cells.
6. A system according to claim 1, in which exchanges between the train and a wayside subsystem take place using TDMA and a protocol for allocating time slots to the trains in which a time slot is allocated to each train entering a cell by a wayside radio unit in response to the train sending an entry identification to the wayside subsystem.

7. A system according to claim 6, in which the exit of a train from a cell is detected by repeated failure of the train to respond to a request from the wayside radio unit allocated to the cell.

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8. A system according to claim 1, in which the train has two car radio units, one placed at the front and the other placed at the back, and designed to enable the two units to be handed over from one cell to another

10 independently and in succession.